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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of: **TAKENAKA, Tadashi, et al.**

Group Art Unit: **Not Yet Assigned**

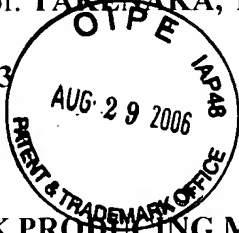
Serial No.: **10/581,313**

Examiner: **Not Yet Assigned**

Filed: **June 2, 2006**

P.T.O. Confirmation No.: **3860**

For: **BRAKE DISK PRODUCING METHOD AND BRAKE DISK**



LETTER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

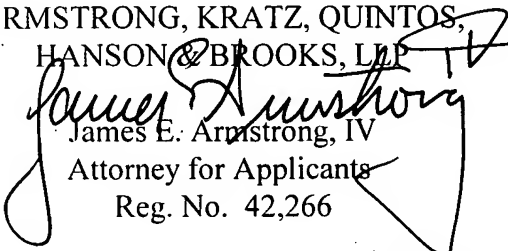
Date: August 29, 2006

Sir:

The attention of the Patent and Trademark Office is hereby directed to copies of the PCT Notification of Transmittal of Copies of Translation of the International Preliminary Report on Patentability (Form PCT/IB/338); International Preliminary Report on Patentability (Form PCT/IB/373); and Translation of Written Opinion of the International Searching Authority (Form PCT/ISA/237) attached herewith.

This Report is submitted herewith to be placed in the U.S. Patent and Trademark Office file of this case.

Respectfully submitted,

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HANSON & BROOKS, LLP

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PATENT TRADEMARK OFFICE

Enclosures: Form PCT/IB/338; Form PCT/IB/373; and Form PCT/ISA/237.



PATENT COOPERATION TREATY

PCT/JP2004/017571

From the INTERNATIONAL BUREAU

NOTIFICATION OF TRANSMITTAL
OF COPIES OF TRANSLATION
OF THE INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY
(CHAPTER I OR CHAPTER II
OF THE PATENT COOPERATION TREATY)
(PCT Rules 44bis.3(c) and 72.2)

To:

YANAGINO, Takao
Noskmard building
15-5, Miyahara 1-chome
Yodogawa-ku, Osaka-shi
Osaka 5320003
JAPON

Date of mailing (day/month/year) 03 August 2006 (03.08.2006)	
Applicant's or agent's file reference 17099	IMPORTANT NOTIFICATION
International application No. PCT/JP2004/017571	International filing date (day/month/year) 26 November 2004 (26.11.2004)
Applicant SUNSTAR ENGINEERING INC. et al	

1. Transmittal of the translation to the applicant.



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

2. Transmittal of the copy of the translation to the designated or elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

None

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Masashi Honda
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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 17099	FOR FURTHER ACTION	See item 4 below
International application No. PCT/JP2004/017571	International filing date (<i>day/month/year</i>) 26 November 2004 (26.11.2004)	Priority date (<i>day/month/year</i>) 02 December 2003 (02.12.2003)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant SUNSTAR ENGINEERING INC.		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis.2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	Date of issuance of this report 27 July 2006 (27.07.2006) Authorized officer <p style="text-align: center; font-weight: bold;">Masashi Honda</p> e-mail: pt08@wipo.int
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PATENT COOPERATION TREATY

TRANSLATION

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

Date of mailing
(day/month/year)

Applicant's or agent's file reference

17099

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/JP2004/017571

International filing date (day/month/year)

26.11.2004

Priority date (day/month/year)

02.12.2003

International Patent Classification (IPC) or both national classification and IPC

Applicant

SUNSTAR ENGINEERING INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/017571

Box No. 1 Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐

This opinion has been established on the basis of a translation from the original language into the following language

_____, which is the language of a translation furnished for the purposes of international search (under

Rule 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐

a sequence listing

☐

table(s) related to the sequence listing

b. format of material

☐

in written format

☐

in computer readable form

c. time of filing/furnishing

☐

contained in the international application as filed.

☐

filed together with the international application in computer readable form.

☐

furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/JP2004/017571

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	1-16	YES
	Claims	_____	NO
Inventive step (IS)	Claims	7-9, 14-16	YES
	Claims	1-6, 10-13	NO
Industrial applicability (IA)	Claims	1-16	YES
	Claims	_____	NO
2. Citations and explanations:			
<p>Document 1: Microfilm of the specification and drawings annexed to the application of Japanese Utility Model Application No. 19834/1974 (Laid-open No. 109088/1975) (Kayaba Kogyo K.K.), 6 September, 1975 (06.09.75), Fig. 1, (Family: none)</p> <p>Document 2: JP, 2000-205312, A (Yamaha Motor Co., Ltd.), 25 July, 2000 (25.07.00), paragraph [0026], Fig. 5, (Family: none)</p> <p>Document 3: JP, 2003-147491, A (Nissin Steel Co., Ltd.), 21 May, 2003 (21.05.03), paragraph [0029], (Family: none)</p> <p>The subject matters of claims 1 and 10 do not appear to involve an inventive step in view of documents 1 and 2 cited in the ISR. A disk plate having repetitions of a projection and a recess on its periphery, described in document 1, and a brake disk described in document 2 wherein the edges of holes and slots on the disk surfaces are chamfered belong to technical fields closely related to each other; and a person skilled in the art could have easily conceived the idea of applying the constitution of chamfered edges described in document 2 to the peripheral edges with repetitions of a projection and a recess, described in document 1.</p> <p>A process of forming chamfered faces by means of press forming is well known. In addition, a process of forming chamfered faces by pressing a die to plastically deform angle parts is one of the techniques in the above-mentioned press forming, and a matter of design variation that a person skilled in the art could have chosen as required.</p> <p>The subject matters of claims 2 and 11 do not appear to involve an inventive step in view of documents 1 and 2. It is well known that, after a chamfering process by means of press forming, a process of shaving faces that continue from the chamfered faces into chamfered faces may be put. In that case, a person skilled in the art could have naturally and easily conceived the idea of processing parts of the tops of the projections in the repetitions of a projection and a recess to coincide with an arc of a concentric circle on the center of revolution of the rotor plate.</p> <p>The subject matter of claim 3 does not appear to involve an inventive step in view of documents 1 and 2. Thermal treatment of a rotor plate to harden its braking front surfaces and back surfaces is well known, as shown in document 3 cited in the ISR. According a person skilled in the art could have easily conceived the idea of including a thermal-treatment process to harden surfaces of a disk.</p> <p>The subject matters of claims 4 and 12 do not appear to involve an inventive step in view of documents 1 and 2. Whether chamfered surfaces are made on both sides of a rotor plate, or whether such surfaces are made only on a side of the plate with angle parts on its periphery that are not deformed, is a matter of variation that a person skilled in the art would have chosen as required. In</p>			

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/017571

Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability:
citations and explanations supporting such statement

that case a person skilled in the art could have naturally conceived a constitution that a side of a plate with angle parts that are not deformed is attached surfaces to a wheel, merely as a matter of design variation.

The subject matters of claims 5, 6 and 13 do not appear to involve an inventive step in view of documents 1 and 2. Using a die having slanted faces that abut the angle parts of the peripheral edges on all the circumference of a rotor plate when chamfered surfaces are formed on the said peripheral edges, is a matter of design variation that a person skilled in the art could have chosen as required. Chamfer lengths that are appropriate for the size of deformation of the angle parts on the peripheral edges can be made by changing the angles of the slanted surfaces of a die that abut such parts; and what type of die is used is a matter of design variation that a person skilled in the art could have chosen as required.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/017571

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claims 7-9 and 14-16 do not specify what uses the claimed brake disks have, and therefore, the sizes of them are unclear. Definitions by number values in claims 7-9 and 14-16 do not have any technical meaning until the sizes of the brake disks are specified. Consequently the definitions by number values in claims 7-9 and 14-16 are unclear in terms of technical meaning.

The definitions by number values in claims 7-9 and 14-16 include 0.1 mm and 0.2 mm as a minimum value of chamfer length; on the other hand, Fig. 8 in the specification shows the amount of wear of a brake pad in case of 0 mm and 0.3 mm of chamfer length. However, it is impossible to uniquely derive the amount of wear of a brake pad in case of 0.1 mm and 0.2 mm of chamfer length from the above-mentioned content of the specification, so that the critical meaning of those number values are not fully supported by the specification.